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RICE, ELISA M	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/814,344	SAKAGAMI ET AL.	
	Examiner	Art Unit	
	ELISA M. RICE	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *7/3/2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *8/20/2008, 4/14/2008*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Applicant's amendments filed on July 3, 2008 have been received and entered. Claims 1-10 are currently pending.

Response to Arguments

Applicant's Remark:

"Thus, Kuno discloses that the extraction of the head portion of the subject is performed by the data processing/control section 4 (more specifically, the signal processor 32), and that the data processing/control section 4 is outside of the robot 5. (see col. 7, lines 24-28; col. 8, lines 12-16; FIG. 1). However, independent claims 1 and 10 each clearly recite that all of the limitations are performed by the robot. Thus, there is no disclosure, or suggestion, in Kuno as to the robot either performing the image cutting out so that the cut out portion of the image include a face image of the detected human, or transmitting only the cut out portion of the image to the external terminal." (Remarks, second paragraph, page 10).

Examiner's Answer:

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., head portion extraction and transmitting means physically inside the robot 5) are

not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Applicant argues that the head extraction and transmitting means are not physically inside the robot 5, but this limitation is not part of the claimed recitation. In addition, a robot is simply a machine or device that operates automatically or by remote control.

Applicant's Remarks:

"Higaki does not cure the deficiencies in Kuno, as Higaki also does not disclose, teach, or suggest, at least, "image transmitting means for transmitting only the cut out portion of the image including the face image to an external terminal," as recited in independent claim 1." (Remarks, third paragraph, page 11)

Examiner's Answer:

Examiner relies on Kuno, not Higaki to disclose these elements. See previous Examiner's Answer.

Applicant's Remarks:

"As discussed above, Kuno does not disclose, teach, or suggest all of the elements of independent claim 1. Furthermore, Nakadai does not cure the deficiencies in Kuno, as Nakadai also does not disclose, teach, or suggest, at least, "transmitting only the face

part from the color image to an external terminal." While the robot disclosed in Nakadai performs face recognition, there is no disclosure, or suggestion, that the robot transmits only the extracted image (including the face image) to an external terminal." (Remarks, last paragraph of page 12 to first paragraph of page 13).

Examiner's Answer:

Examiner relies on Kuno, not Nakadai to disclose these elements. See previous Examiner's Answer.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. **Claims 1, 2, 3, 4, 5, 7, 8, 9** and **10** are rejected under 35 U.S.C. 102(b) as being anticipated by Kuno (US 5,802,494).

Regarding claim 1, Kuno discloses an image transmission system for a mobile robot, said robot comprising:

a camera for capturing an image as an image signal (Figure 2B, 31a and 31b; "video camera", Kuno, column 1, line 11).

human detecting means for detecting a human from the captured image ("*As can be understood from FIG. 16, the facial features of the subject, e.g., the eyebrows, the eyes, the nose, the ears, the mouth, have the position relation which is common to human beings. This relation is defined by the positions of individual facial features with respect to the vertical and horizontal directions, and also by the distances between the facial features. The designated local module or the host computer 6d can, therefore, determine the positions of the facial features detected in step f4, in accordance with the data representing said position relation. To detects the images of the facial features, the vertical center line of the subject's face is first detected from the outline of the subject's head, the angle by which the subject faces away from the video camera 31a is then determined from the position of the center line and the position of the top*

of the head. More specifically, the host computer 6d determines the angle from the positions of the vertical center line of the face and the top of the head, and then determines the position relation among the facial features. If any facial feature detected is not located at the position it should take, it will be identified in accordance with its position with respect to those of the other facial features detected later. If the facial feature cannot be identified, the local module assigned to the region in which the facial feature may exists processes the video signals representing the region, for the second time.", Kuno, column 12, lines 43-65)

a power drive unit for moving the entire robot toward the detected human ("Another drive mechanism is incorporated in the trunk of the robot 5. When this mechanism is actuated, the robot 5 moves in any direction on the floor", Kuno, column 28, lines 27-29);

face identifying means for identifying a position of a face of the detected human ("As can be understood from FIG. 16, the facial features of the subject, e.g., the eyebrows, the eyes, the nose, the ears, the mouth, have the position relation which is common to human beings. This relation is defined by the positions of individual facial features with respect to the vertical and horizontal

directions, and also by the distances between the facial features. The designated local module or the host computer 6d can, therefore, determine the positions of the facial features detected in step f4, in accordance with the data representing said position relation. To detects the images of the facial features, the vertical center line of the subject's face is first detected from the outline of the subject's head, the angle by which the subject faces away from the video camera 31a is then determined from the position of the center line and the position of the top of the head. More specifically, the host computer 6d determines the angle from the positions of the vertical center line of the face and the top of the head, and then determines the position relation among the facial features. If any facial feature detected is not located at the position it should take, it will be identified in accordance with its position with respect to those of the other facial features detected later. If the facial feature cannot be identified, the local module assigned to the region in which the facial feature may exists processes the video signals representing the region, for the second time.", Kuno, column 12, lines 43-65)

face image cut out means for cutting out a portion of the captured image of the detected human so that the portion of the image includes a face image of the detected human;

("the image of the subject's head is extracted from the input image (Figure 11A)", Kuno, column 9, lines 43-44); and

image transmitting means for transmitting only the cut out portion of the image including the face image to an external terminal ("and the signals showing the subject's image are transmitted to a CRT display installed in a monitor room", Kuno, column 1, lines 60-62)

Regarding claim 2, Kuno discloses an image transmission system according to claim 1, further comprising means for monitoring state variables including a current position of the robot; the image transmitting means transmitting the monitored state variables in addition to the cut out face image ("FIG. 28 is a diagram illustrating how to determine the position of the robot," Kuno, column 3, lines 16-17, "The physician looks at the subject's face being displayed on the display of the monitor console and also checks the physical conditions being displayed on the other displays of the console, in order to decide what he or she should do for the subject.", Kuno, column 5, lines 26-30, "the circuit 40 starts transmitting the image data representing the image of the subject, to the monitor section 2", Kuno, column 5, lines 14-16, "Meanwhile, the electronics sensors 33 installed in the sickroom, such as the hemadynamometer and the electrocardiograph, both attached to the subject, output diagnosis signals, representing the physical conditions of the subject. The video signals and the diagnosis signals are input to the signal processor 32 incorporated in the data-processing/control section 4. The

processor 32 processes these input signals, thereby generating image data and diagnosis data. The image data and the diagnosis data are supplied to the abnormality decision circuit 34 incorporated in the robot 5.", Kuno, column 5, lines 10-20).

Regarding claim 3, Kuno discloses an image transmission system according to claim 1, wherein the robot is adapted to direct the camera toward the position of the face of the detected human ("Since the video camera 31a built in the robot 5 is directed to only the subject on the bed", Kuno, column 7, lines 30-31).

Regarding claim 4, Kuno does not disclose an image transmission system according to claim 1, further comprising means for measuring a distance to each of a plurality of humans, the human detecting means being provided with means for detecting a human closest to the robot ("The robot 5 has several ultrasonic sensors on its trunk. The ultrasonic sensors detect the distances between the robot 5 and the other objects in the sick room. An alarm signal is generated and transmitted to the monitor section 2 when any ultrasonic sensor detects that the robot 5 is too close to any other object.", Kuno, column 30, lines 34-39).

Regarding claim 5, Kuno discloses an image transmission according to claim 1, wherein the mobile robot is adapted to move toward the detected human according to a distance to the detected human ("The robot 5 has several ultrasonic sensors on its trunk. The ultrasonic sensors detect the distances between the robot 5 and the other

objects in the sick room. An alarm signal is generated and transmitted to the monitor section 2 when any ultrasonic sensor detects that the robot 5 is too close to any other object.", Kuno, column 30, lines 34-39).

Regarding claim 7, Kuno discloses an image transmission system according to claim 1, wherein the face identifying means comprises means for detecting an outline of the detected human, and identifying a face as an area defined under an upper part of the outline of the detected human ("As can be understood from FIG. 15, in step f1, one of the the local modules processes the video signals representing those pixels near the sides of the rectangle (FIG. 11D), thereby detecting the outline of the subject's head.", Kuno, column 12, lines 12-15).

Regarding claim 8, Kuno discloses an image transmission system according to claim 1, wherein the human detecting means is adapted to detect a human as a moving object that changes in position from one frame of the image to another ("In step i7, it is determined whether or not any object is moving. This decision is made based on the ratio in number of the small-value pixels to the great-value pixels--all stored in the memories. More precisely, when this ratio is greater than a threshold value, it is determined that the input image includes the image of at least one moving object. This is because the pixels defining the outline of a movable object, if any in the input image, have great values when the outline does not move at all during said predetermined

period. Hence, whether or not any object is moving can be determined very accurately." Kuno, column 20, lines 16-26).

Regarding claim 9, Kuno discloses an image transmission system according to claim 1, wherein the face image of the detected human occupies a substantially entire area of the cut out portion of the image ("and the signals showing the subject's image are transmitted to a CRT display installed in a monitor room", column 1, lines 60-62, "the image of the subject's head is extracted from the input image (Figure 11A)", column 9, lines 43-44).

Regarding claim 10, Kuno discloses an image transmission system for a mobile robot, said robot comprising:

a camera for capturing an image as an image signal (Figure 2B, 31a and 31b; "video camera", Kuno, column 1, line 11).

human detecting means for detecting a human from the captured image ("*As can be understood from FIG. 16, the facial features of the subject, e.g., the eyebrows, the eyes, the nose, the ears, the mouth, have the position relation which is common to human beings. This relation is defined by the positions of individual facial features with respect to the vertical and horizontal directions,*

and also by the distances between the facial features. The designated local module or the host computer 6d can, therefore, determine the positions of the facial features detected in step f4, in accordance with the data representing said position relation. To detects the images of the facial features, the vertical center line of the subject's face is first detected from the outline of the subject's head, the angle by which the subject faces away from the video camera 31a is then determined from the position of the center line and the position of the top of the head. More specifically, the host computer 6d determines the angle from the positions of the vertical center line of the face and the top of the head, and then determines the position relation among the facial features. If any facial feature detected is not located at the position it should take, it will be identified in accordance with its position with respect to those of the other facial features detected later. If the facial feature cannot be identified, the local module assigned to the region in which the facial feature may exists processes the video signals representing the region, for the second time.", Kuno, column 12, lines 43-65)

a power drive unit for moving the entire robot toward the detected human ("Another drive mechanism is incorporated in the trunk of the robot 5.

When this mechanism is actuated, the robot 5 moves in any direction on the floor", Kuno, column 28, lines 27-29);

face identifying means for identifying a position of a face of the detected human ("As can be understood from FIG. 16, the facial features of the subject, e.g., the eyebrows, the eyes, the nose, the ears, the mouth, have the position relation which is common to human beings. This relation is defined by the positions of individual facial features with respect to the vertical and horizontal directions, and also by the distances between the facial features. The designated local module or the host computer 6d can, therefore, determine the positions of the facial features detected in step f4, in accordance with the data representing said position relation. To detects the images of the facial features, the vertical center line of the subject's face is first detected from the outline of the subject's head, the angle by which the subject faces away from the video camera 31a is then determined from the position of the center line and the position of the top of the head. More specifically, the host computer 6d determines the angle from the positions of the vertical center line of the face and the top of the head, and then determines the position relation among the facial features. If any facial feature detected is not located at the position it

should take, it will be identified in accordance with its position with respect to those of the other facial features detected later. If the facial feature cannot be identified, the local module assigned to the region in which the facial feature may exists processes the video signals representing the region, for the second time.", Kuno, column 12, lines 43-65)

face image cut out means for cutting out a portion of the captured image of the detected human so that the portion of the image includes a face image of the detected human; ("the image of the subject's head is extracted from the input image (Figure 11A)", Kuno, column 9, lines 43-44) ; and

image transmitting means for transmitting only the cut out portion of the image including the face image to an external terminal ("and the signals showing the subject's image are transmitted to a CRT display installed in a monitor room", Kuno, column 1, lines 60-62)

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Kuno (US 5,802,494) and Nakadai et al. (US 6,967,455 B2).

Regarding claim 6, Kuno discloses an image transmission system according to claim 1, further comprising a face database("The operator can store into the host computer 6d the data representing the properties of the subject's head, including those of his or her facial features.", Kuno, column 17, lines 57-59)

Kuno does not teach an image transmission system that includes a face database that stores images of a plurality of faces and face identifying means for comparing the cut out face image with the faces stored in the face database to identify the cut out face image.

However, Nakadai teaches an image transmission system that includes a face database that stores images of a plurality of faces and face identifying means for comparing the cut out face image with the faces stored in the face database to identify the cut out face image (Fig. 6, num. 38).

It would have been obvious to one of ordinary skill in the art to combine the mobile robot taught by Kuno, as described in claim 1 above, with a face database that stores images of a plurality of faces and face identifying means for comparing the cut out face image

with the faces stored in the face database to identify the cut out face image as taught by Nakadai in order to be able to discern a particular individual from many individuals as is well known to one of ordinary skill in the art.

6. **Claim 6** is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Kuno (US 5,802,494) and Higaki (2004/0028260 A1).

Regarding claim 6, Kuno discloses an image transmission system according to claim 1, further comprising a face database ("The operator can store into the host computer 6d the data representing the properties of the subject's head, including those of his or her facial features.", Kuno, column 17, lines 57-59)

Kuno does not teach an image transmission system that includes a face database that stores images of a plurality of faces and face identifying means for comparing the cut out face image with the faces stored in the face database to identify the cut out face image.

However, Higaki teaches an image transmission system that includes a face database that stores images of a plurality of faces and face identifying means for comparing the cut out face image with the faces stored in the face database to identify the cut out face image ("Reference symbol 72 denotes a face database in which human

facial recognition information is predefined. [0041] The face recognition section 60 picks out only the face part from the color image 81, based on the face position coordinates 105 and 106, and obtains a face feature vector. The face recognition section 60 searches the face database 72 based on the data similar to the obtained feature quantity, and in the case where corresponding face data exists, stores the individual person ID 104 assigned to the corresponding face data in the memory 8. The generation operation for the 3D object data 100 described here is repeatedly carried out regardless of the other processing status.", Higaki, paragraph 86).

It would have been obvious to one of ordinary skill in the art to combine the mobile robot taught by Kuno, as described in claim 1 above, with a face database that stores images of a plurality of faces and face identifying means for comparing the cut out face image with the faces stored in the face database to identify the cut out face image as taught by Higaki in order to "recognizes faces from amongst a plurality of persons" (Higaki, paragraph 22).

Double Patenting

7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct

from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

8. Claim 1 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of copending Application No. 10/814343 in view of Kuno (US 5,802,494).

Claim 1 of copending application 10/814343, while disclosing a camera, a human detecting means, a power drive unit, an image cut out means and an image transmission means does not teach a face identifying means and a face image cut out means.

Kuno teaches a system in the same field of image transmission for a mobile robot, comprising the face identifying means and a face image cut out means as discussed in the Claim 1 rejection above.

It would have been obvious to modify claim 1 of application 10/814343 to include a face identifying means and a face image cut out means because the face of a human being is the most identifiable part of a human being and including the rest of the body is unnecessary in that it does not add much additional information that cannot be obtained from viewing solely the face.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ELISA M. RICE whose telephone number is (571)270-1582. The examiner can normally be reached on 12:00-8:30p.m. EST Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vikkram Bali can be reached on (571)272-7415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Elisa M Rice/
Examiner, Art Unit 2624

/Vikkram Bali/
Supervisory Patent Examiner, Art Unit 2624